

HABS No. MO-1135-D

Missouri Botanical Garden
Linnaean House
Missouri Botanical Garden
2345 Tower Grove Avenue
St. Louis
Missouri

HABS
MO,
96-SALU,
105D-

PHOTOGRAPHS
REDUCED COPIES OF MEASURED DRAWINGS
WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Buildings Survey
National Park Service
Department of the Interior
Washington, D.C. 20240

HISTORIC AMERICAN BUILDINGS SURVEY

HABS No. MO-1135-D

MISSOURI BOTANICAL GARDEN
LINNAEAN HOUSE

Location: Garden Headquarters at 2345 Tower Grove Avenue, St. Louis, Missouri. The Linnaean House lies at the north end of the Garden.

USGS Webster Groves Quadrangle, Universal Transverse Mercator Coordinates: 15.738800.4277430.

Present Owner: Board of Trustees, Missouri Botanical Garden.

Present Use: Greenhouse.

Significance: The Linnaean House is a well-preserved example of the mid-nineteenth century type of greenhouse ("Linnaean House," MBG Bulletin June, 1936, p. 113) and features unusual decorative brickwork. The only remaining one of Shaw's original greenhouses (MBG Bulletin, December 1918, pp. 127-128), it is "probably the oldest structure of this type in continuous use west of the Mississippi and perhaps in the whole country" (Anderson and Brockhoff, p. 3).

PART I. HISTORICAL INFORMATION

A. Physical History:

1. Date of erection: April-December 1881 (Shaw Mss. 'Bills 1881-1882').
2. Architect: George I. Barnett and Isaac S. Taylor ('Bills 1881-1882'). For biographical information see the HABS report on the Missouri Botanical Garden (MO-1135).
3. Original and subsequent owners: Legal description of property: Linnaean House lies at the northern end of the Missouri Botanical Garden, present city block 4104, which is bounded on the north by Shaw Avenue, the south by Magnolia Avenue, the east by Tower Grove Avenue, and the west by Alfred Avenue. Most of the seventy-five acre plat for the Garden was purchased by Shaw at a Sheriff's sale of Thomas Payne's property in 1842 (title in Shaw's Mss., 'Real Estate, Barriere des Noyers') and the rest from the original claimants of the Spanish Military Commander's tract (Shaw, pp. 138-139). The Garden became the property of, and continued to be governed by, the Board of Trustees designated by Shaw's will at the time of his death, August 25, 1889 ("Some Facts about the Garden," n.p.).

4. Builder, contractor, suppliers, etc.: Barnett and Taylor supervised the construction, receiving \$450.00 in full for plans and services (receipt 10/8/1881, in Shaw Mss. 'Bills 1881-1882'), McBride and Julian laid the brick for \$1,829.22 (bill 10/14/81 in Shaw Mss. 'Bills 1881-1882'). The stone-work was done by Richard Langwith for \$1,131.05 (bill 12/20/81 in Shaw Mss. 'Bills 1881-1882'), the foundations having been dug by Presnecek and Novotny for \$75 (bill 4/7/81 in Shaw Mss. 'Bills 1881-1882'). The iron roof trusses were supplied by Christopher, Simpson, and Company for \$1,637.60 (bill 12/31/81 Shaw Mss. 'Bills 1881-1882'); the slate roofing was done by T. F. and J. A. Hayden for \$250 (bill in Shaw Mss. 'Bills 1881-1882'); Hull and Cozzens received \$2,327.00 for contract work on gutters, flashing, and skylights (bill 11/23/1881, in Shaw Mss., 'Bills 1881-1882'); millwork--sashes--by Olcott and Duross for \$560 (bill in Shaw Mss. 'Bills 1881-1882'); and steam pipes were fitted to the building by Branch, Crookes, and Company for \$105.67 (bill in Shaw Mss. 'Bills 1881-1882')--all firms in St. Louis.

The bust of Linnaeus (and probably those of Nuttall and Gray) capping the center entrance was done by Howard Kretschmar, a local sculptor for \$400.00 (letter 6/3/81 in Shaw Mss. 'Bills 1881-1882'). Carolus Linnaeus (1707-1778), popularly known as the "Father of Botany" developed a universally accepted system for defining and naming genera and species (Blunt). Thomas Nuttall (1786-1859), popularly known as the "Father of American Western Botany" made extensive explorations of the Midwest and the Oregon Territory classifying and collecting plant specimens (Graustein). Asa Gray (1810-1888) was a renowned scholar and teacher specializing in North American botany and served in an advisory capacity to Shaw for the formation of the Garden and for the later creation of a working relationship between the Garden and Washington University (Ency. Britannica).

5. Original plans, construction, etc.: The plans were presumably destroyed in the 1930s with the closing of the offices of one of the successors to Barnett's firm (Paolinelli interview).

Originally designed as an orangery for a collection of tub-bed palm trees (MBG Bulletin, June, 1919, p. 68), the Linnaean House was built on the site of a previous "hothouse," delineated on the maps of Tower Grove 1865, Plan of Missouri Botanical Garden 1858, and Lands of Henry Shaw at and around

Tower Grove 1872. (All 3 maps in Tower Grove House, MBG.) However, in the 1876 Bird's-eye View this "hothouse" does not appear, perhaps already having been torn down in anticipation of future construction of the Linnaean House.

The dedication and unveiling of the busts of Linnaeus "Father of Botany," Nuttall "Father of Western American Botany," and Asa Gray "Father of American Botany" occurred on Friday, June 22, 1883, before the convocation of members and guests of the American Association of Nurserymen, Florists, then holding its annual convention in St. Louis (MBG Bulletin Oct. 1956, p. 113).

According to former Garden Director, Hugh Cutler, "Mr. Shaw must have planned to place other figures or ornamental features on the corners and on the highest points of the ends, for into the centers of the stones at these points are cut holes for anchoring...." (Cutler, p. 2); but no evidence--photographic or in Shaw's accounts--exists to indicate that these were ever purchased.

6. Alterations and additions: Nineteenth-century views show a deeper transom consisting of two sections with a pair of vertical panes flanked by scrolled brackets, now altered and removed, respectively, at the south entrance. In the spring of 1919, at a cost of \$300 (City building permit K7405) there was an extensive remodeling of the house. The half-slate, half-glass roof was replaced by an all-glass one; a considerable amount of new iron was needed (Trustees' Minutes 3/31/19, p. 3). Concrete troughs and retaining walls were placed in front of the new heating system conduits (Trustees' Minutes 2/28/19, p. 2). The old walks were eliminated by 300 loads of earth to produce the landscape effect desired for the display of camellias, azaleas and evergreens (Moore, p. 2). Two sets of windows consisting of two larger sashed windows with eighteen lights and one lower small one, symmetrically disposed towards the outer edges of the north wall, were bricked and/or cemented over; as were four small, semi-circular openings near the foundation line on the same wall. The northern-most windows of the east elevation were shortened at the same time (Trustees' Minutes 2/28/19, p. 3). Presumably the inner half of the double windows on the east and west ends, some of which had colored glass lights, were removed at this time. The central chimney was removed from the north wall (Trustees' Minutes 1/31/19, p. 2), and probably also the cast metal decorating the roof ridge at the same time. Inside, a central ledge

and rock pool were constructed from rock brought from Hot Springs, Ark. (Trustees' Minutes, 1/31/19, p. 2), and changes were made to the doors (Trustees' Minutes, 5/31/19).

In 1927, the roof of the house was restored to its original type, being entirely rebuilt with new sash bars and ventilators used and the size of the glass panes cut down from 24" by 24" to 16" by 24". Permanent roofing six feet wide was installed on either side of the house. The worn and storm-damaged galvanized iron, standing seam roofing at the east and west ends of the house was removed and replaced with orange-red tile. The vestibule roof of the middle entrance was entirely rebuilt, substituting permanent roofing for glass (Trustees' Minutes, 10/14/27, pp. 2-3).

In 1932 new doors were put on (Trustees' Minutes, 4/30/32, p. 1). Aside from normal maintenance, nothing else was done to the house until 1956, at which time new (composition) roofing and flashing were added (Cutler, p. 113). In 1968 flood lights were installed ("Maintenance," MBG Bulletin, March-April, 1968, p. 44) and in 1970 an automatic ventilation system was added ("Maintenance," MBG Bulletin, March-April, 1970, pp. 29-31).

The Environmental Planning and Design Master Plan for the Garden, presented on January 15, 1974 makes the recommendation that the Linnaean House in the future be developed as an entry portal to the Garden from the proposed expanded north parking lot area, and returned to its original function as orangery. This would require "slight moderations in the form of new doors, windows, and paving." Preliminary recommendations for such have been made by architects Hellmuth, Obata, and Kassabaum. (EPD Master Plan Notes, pp. 44, 45).

B. Historical Events and Persons Connected with the Structure:

1. Henry Shaw (1800-1889). For biographical information about the founder of the Garden, see HABS report on the Missouri Botanical Garden (MO-1135).
2. Howard Sigismund Kretschmar, sculptor (1845-1933). For biographical information, see the HABS report on the Missouri Botanical Garden (MO-1135).

C. Sources of Information:

1. Old views: Two exterior views from southeast and sculpture details of c. 1906 are on glass plates located in the office

of former floriculturist Paul Kohl in Tower Grove House (see HABS photocopies). The Lehmann Library houses, in its Rare Book Stacks, the Garden Pictorial File which contains about fifty (mostly undated) views of the south, east, and west facades, the interior rock pool, and the interior looking west.

2. Bibliography:

a. Primary and unpublished sources:

1. Manuscripts, etc.: The Lehmann Library contains an unpublished paper by Dorothy A. Brockhoff of March 8, 1962, entitled a "A Study of Henry Shaw and His House" as well as the Minutes of the Trustees, 1889-1933, and Shaw's bills of 1881-1882.

Building permits issued for block 4104 to the Garden are located in room 426 City Hall, Market Street, St. Louis.

The Environmental Planning and Design Master Plan notes, January 15, 1974, are in the custody of Assistant Garden Director, William Klein.

2. Deeds: Titles and deeds to property that became the Missouri Botanical Garden are located in the Shaw Mss. Real Estate, Barriere des Noyers accounts, John S. Lehmann Library, Missouri Botanical Garden.
3. Interviews: 6/8/74; Offices of Sylvester Schmidt associates, 601 Olive St. (Railway Exchange Building); Fernando Paolinelli, one of the principals in one of the firms succeeding George I. Barnett's (T. P. Barnett), revealed that all plans done by Barnett for Shaw were destroyed upon the closing in the 1930s of the other succeeding firm, Barnett, Haynes, and Barnett, in spite of efforts by the T. P. Barnett firm to retrieve them.

b. Secondary and published sources:

Anderson, Edgar and Dorothy Brockhoff. "Henry Shaw," Missouri Botanical Garden Bulletin, LV, #5 (June 1967), pp. 3; 86-100.

"Barnett, Haynes, and Barnett," The Church Progress, (July 27, 1922), p. 10.

Barnett, Thomas P. "Pioneer Architect of the West," Western Architect, (February 1912), pp. 13-24.

- Blunt, Wilfrid. The Compleat Naturalist: A Life of Linnaeus. London: William Collins, Sons and Co., Ltd., 1971.
- Cutler, Hugh. "The Linnaean House," Missouri Botanical Garden Bulletin, XLIV, #8 (October 1956), p. 113.
- Dimmock, Thomas. "Henry Shaw: A Biography (1890)," Missouri Botanical Garden Reprint, 1946.
- Graustein, Jeannette E. Thomas Nuttall. Cambridge, MA.: Harvard University Press, 1967.
- "Gray, Asa," Encyclopedia Britannica, X, 14th ed., New York: Encyclopedia Britannica Co., Inc., 1929, pp. 668-669.
- "Henry Shaw's Contributions to Art in St. Louis," Missouri Botanical Garden Bulletin, VI, #7 (September 1918), pp. 81-90.
- Hyde, William and Howard L. Conrad, eds. "George I. Barnett," Encyclopedia of the History of St. Louis, I, St. Louis: The Southern History Co., 1899, p.98.
- Kobuski, Clarence E. "Formative Days of Mr. Shaw's Garden," Missouri Botanical Garden Bulletin, XXX, #5 (May 1942), pp. 100-110.
- "Kretschmar, Howard Sigismund," St. Louis Post Dispatch (March 4, 1964) artists' file, St. Louis Public Library.
- "Linnaean House," Missouri Botanical Garden Bulletin, VII, #6, (June 1919), p. 67-69.
- "Linnaean House," Missouri Botanical Garden Bulletin, XXIV, #6 (June 1936), p. 143.
- MacAdam, David H. Tower Grove Park. St. Louis: R. P. Studley and Co., 1883.
- "Maintenance," Missouri Botanical Garden Bulletin, LVIII, #2 (March-April 1970), pp. 29-31.
- "Maintenance and Engineering," Missouri Botanical Garden Bulletin, LVI, #2 (March-April 1968), pp. 43-44.

- Moore, George. "Thirty-first Annual Director's Report," Missouri Botanical Garden Bulletin, VIII, #1 (January 1920), p. 2.
- Shaw, Henry. "Guide to the Missouri Botanical Gardens in 1880," Missouri Botanical Garden Bulletin, XXXI, #7 (September 1943), pp. 138-145.
- Shoemaker, Floyd Calvin, ed. "George I. Barnett," Missouri and Missourians; Missouri Biography, V. Chicago: The Lewis Publishing Co., 1943, p. 73.
- "Some Facts about the Garden," Missouri Botanical Garden Bulletin, XXXI, #7, n. p.
- "Taylor, Isaac S.," The Book of St. Louisans. St. Louis: St. Louis Republic, 1912, pp. 588-589.
- "Taylor, Isaac S.," Who was Who in America, I. Chicago: A. W. Marquis Co., 1966, p. 1220.

PART II. ARCHITECTURAL INFORMATION

A. General Statement:

1. Architectural character: The Linnaean House, still a functioning planthouse, combines classical decorative features articulated in brick with utilitarian features such as full-story-high segmental sash windows and a skylight roof carried by iron trusses.
2. Condition of fabric: Good.

B. Description of Exterior:

1. Over-all dimensions: Rectangular, 150'-2" by 35'-10", seventeen bays (south front) by five bays, one story.
2. Foundations: Rockface limestone, random ashlar.
3. Wall construction, finish, and color: Red brick walls with white limestone caps on pilasters, piers, window sills, and door surrounds on east and west ends. The center bay of the south side is gabled and capped with a bust of Linnaeus resting on a carved stone base. This gable is flanked by projecting brick piers, topped with stone caps surmounted by a

bust of Nuttall on the west and one of Gray on the east. In the center of the piers, inset, horizontally-laid stretchers are stacked at a slight angle, creating a louvered appearance. Stone-capped brick pilasters of the same design, projecting slightly less than the piers, divide the bays on the south. They carry a brick entablature, the frieze of which consists of segments of inset, round-edged headers, stacked three-deep, eighteen stacks per bay. 19'-high piers like the ones flanking the south entry adorn each corner of the building, but have no sculpture on them. The north wall is solid brick. On the east and west, pilasters flank the corner piers. The east and west gable ends each have five round-headed windows. On the west a smooth stone band runs between the pilasters and around the door, forming the window sills. Gable ends and entrance gable have decorative brick corbeling beneath the cornice.

4. Structural system: Load bearing walls, iron roof trusses.
5. Openings:
 - a. Doorways and doors: The double doors of the main entrance (south) each have six panes over two rectangular panels. They are flanked by narrow rectangular side lights which continue up around a round-arched fanlight above the doors. Beneath the fanlight and above the doors is a flat transom consisting of four square lights. A narrow, flat strip of wood with a diamond-shaped decorative piece in its center separates the doors from the transom. Pilaster-like moldings with the same single diamond motif, situated between the doors and the side lights, run up to a wooden entablature above the transom. All trim is painted white. The center, semicircular element of the fan is wooden; seven segmental lights radiate from it, separated by thin wooden muntins. Thicker moldings separate the fan's outer edge from the continuation of the side lights running around the fan.

On the east and west are simple double doors, six panes over one panel each. They are surrounded by plain cut stone.
 - b. Windows: The front (south) elevation has sixteen, full-story segmental windows of nine-over-nine light double-hung sash. They have brick heads and stone sills. The west elevation has five round-arched windows with six-over-six-light sash, increasing in dimensions toward the center. They have brick surrounds and a continuous

stone sill. The east windows are of the same design and arrangement, but the two to the south are triple sash, extending to the foundation line, and all have separate stone sills.

6. Roof:

- a. Shape and covering: Gable roof, carried by cast-iron trusses. The top half of the roof is a painted glass skylight. The lower half is covered with composition shingles. The gable ends have a broad coping of terra cotta mission tile.
- b. Cornice, eaves: The gable ends are defined by decorative brick corbeling. A denticulated cornice runs completely around the building. Along the roof line are copper gutters with down spouts.

C. Description of Interior:

1. Floor plan: Open plan, rectangular, 143'-5" by 30'-4".
2. Flooring: There are terraced flower beds along the north wall and a slightly winding brick footpath on the east-west axis with the end doors. A main entrance lane running north and south, intersects the east-west footpath in front of a fountain made of rough-faced stone in the center of the building.
3. Wall and ceiling: The walls are red brick; on the ceiling are the glass skylights and cast-iron trusses with bowed joists.
4. Mechanical equipment: The piping for the hot water system and the fans for heat circulation are exposed.

D. Site:

1. General setting: The Linnaean house stands at the north end of the Garden, with rose beds and rectangular pools in front of it. The surrounding landscaping has become more regular and formalized over the years but has done little to alter the original appearance of the building.

Prepared by	Carolyn Hamm
Supplemented by	Peter Dessauer
	Historians
	National Park Service
	June through Sept.
	1974 and 1975

PART III. PROJECT INFORMATION

The Tower Grove Park and Missouri Botanical Garden Project was jointly sponsored by the Historic American Buildings Survey of the National Park Service, the Board of Commissioners of Tower Grove Park, and the Board of Trustees of the Missouri Botanical Gardens.

Recorded under the direction of John Poppeliers, Chief of HABS, and Kenneth L. Anderson, HABS Principal Architect, the project was conducted during the summer of 1974 and 1975 at the Historic American Buildings Survey field office at the Missouri Botanical Garden, St. Louis.

1974 Team: Robert Harvey, Project Supervisor, (Landscape Architect); Steven Bauer, Project Foreman, (architect, University of Kansas); Carolyn Hamm, project historian, (Cornell University); Patrick Ackerman, student assistant architect, (Washington University); Suzanne Fauber, student assistant landscape architect, (University of Virginia); and Carol Macht, student assistant landscape architect, (University of Michigan).

1975 Team: Stuart Mertz, A.S.L.A., project supervisor, (landscape architect); Steven Bauer, project foreman, (Columbia University); Peter Dessauer, project historian, (Clemson University); Lennard A. Roberts, student assistant architect, (Cornell University); John R. Temmink, student assistant architect, (University of Virginia); and Theodore Torpy, landscape architect, (WASO).

The drawings were revised by HABS architect Paul Dolinsky, and the written data were edited by HABS Architectural Historian Denys Peter Myers, in the HABS Washington office in 1982. The photographs were taken by HABS/HAER Photographer Jet Lowe in 1983.

An addendum to:
Missouri Botanical Gardens,
Linnean House
2345 Tower Grove Avenue
St. Louis City
Missouri

HABS No. MO-1135-D

HABS
MO,
90 SALU,
105D

PHOTOGRAPHS

Historic American Buildings Survey
National Park Service
Department of the Interior
Washington, D.C. 20013-7127